THE STATUS OF INDUSTRIAL ARTS

IN THE STATE OF SOUTH DAKOTA 1948-1949

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By

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Much credit is due my wife, Mary Elizabeth Simmons, for her encouragement and untiring assistance in collecting and assembling the data used.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

CHAPTER I

THE SCOPE AND ORGANIZATION OF THE STUDY

The problem of industrial arts and its place in the school curriculum is of great importance. The writer hopes that this study will reveal some of the deficiencies in the present program and stimulate the improvement of the present status. The state of South Dakota is sparsely settled in large areas which makes it difficult for the teacher to know the existing conditions around him.

With these points in mind the study was organized with the use of an outline. Chapter I acquaints the reader with the scope and organization of the study and the research methods that were used in obtaining information for the study. Chapter II gives a number of definitions that will aid in avoiding any confusion that may develop. The past and present philosophy with the objectives to be attained in industrial arts will be discussed in this chapter. Chapter III consists of the detailed tabulation of that which is encountered in schools that are members of the North Central Association. Chapter IV deals with data concerning the state accredited schools that are not members of the North Central Association. Chapter V includes a summary of the preceding chapters and recommendations for the improvement of the total area of industrial arts in South Dakota.

Part A. Organization of the Study

The problem was organized to include only the information pertaining to the status of industrial arts in the state of South Dakota. Only information about the teacher and the school which includes industrial arts in its curriculum will be discussed at length. No attempt was made to establish a course of study or determine what was in the course of study now being used in the

schools.

Statement of the Problem. The survey of industrial arts in South Dakota includes a study of the North Central Association Schools and the state accredited schools having industrial arts in the curriculum. In dealing with this subject the writer has attempted to show the extent of the industrial arts program in South Dakota schools as to (1) the schools in which industrial arts is taught; (2) size of the schools; (3) size of industrial arts classes; (4) teacher load; (5) salaries; (6) shop equipment; (7) drawing equipment; (8) qualifications of teachers; (9) teacher education in industrial arts; (10) units offered in industrial arts; (11) length of class period; (12) names of industrial arts activities; (13) teaching combinations; (14) use of text books for instruction; and, (15) use of film or film strips in industrial arts.

Divisions of the Study. This study is divided into three parts. The first is a study of the philosophy of the beginning of industrial arts in the United States; also the philosophy and objectives of industrial arts as of today. The second part is a study of all the schools which have industrial arts in the school curriculum and are members of the North Central Association. The third part deals with the schools that do not belong to the North Central Association. The study is concerned with the schools that are now including industrial arts in the curriculum. These schools are members of the state accredited group of schools.

Reasons for the Divisions. There are three hundred ten high schools in the state. Of this number seventy-eight belong to the North Central Association with forty schools of this group having industrial arts in the school curriculum. There are fifty-six industrial arts teachers in the North Central Schools. The remaining two hundred thirty-two schools are accredited high

schools with forty-nine having some form of industrial arts. The larger schools are usually members of the North Central Association, and the accredited group consists mostly of the schools with the small enrollment.

Need for this Study. Status surveys are needed periodically in all fields of education to provide valuable data on which future developments may be based. This information may be used for comparative purposes, to show trends, and to make predictions within the field of study. As far as the writer can determine, no previous study of this nature has been made in South Dakota.

Purpose of this Study. In compiling the data gathered in this survey, the writer hopes to answer many questions concerning industrial arts which have been asked by school board members, superintendents, and industrial arts teachers. Some of the questions might be: (1) How many schools in the state have an industrial arts program? (2) How large should a school be in order to include industrial arts in its program? (3) How much equipment is necessary to start an industrial arts course? (4) What is the salary of the industrial arts teacher? (5) What can the industrial arts teacher do to improve the industrial arts program in the state? It is hoped, through the efforts of this study, that many of the smaller schools of the state will be encouraged to include industrial arts in the high school curriculum.

Delimitations of the Study. This study is limited to industrial arts in South Dakota. This survey does not include vocational agriculture, home economics, or trade and industrial education. It is limited to industrial arts in the secondary level. The major portion of the study is concerned with the four-year high school but when industrial arts is included in the seventh and eighth grades, it is analyzed as a part of the study. No attempt has been made to compare South Dakota industrial arts with programs in other states.

It is hoped that the foregoing limitations will suggest topics for further research in the industrial arts field. There are many research studies that could go deeper into the problem of industrial arts in the state of South Dakota as this study is limited only to the status of industrial arts in the state.

Part B. Method Used in Collecting the Information

Two distinct research methods were used in the collection of information for this study. The first method was the securing of all available information from reports filed in the office of the State Department of Public Instruction in Pierre, South Dakota. The second method used was the sending of an inquiry form to the teachers for information not found in the state records.

Documentary Information. "Annual Report Blanks" are sent in by the principal or superintendent of each school and are on file in the office of the State Department of Public Instruction at Pierre, South Dakota. These forms must be received at the State Department before November 15th of each year. The writer secured permission from the officials of this office to search the files and copy information pertinent to this report. There data were gathered by the writer with the aid of his wife during the Christmas holidays.

The Inquiry Form. Questionnaires or inquiry forms were worked out to include information that was not available at the State Department of Public Instruction. The forms were constructed in as concise form as possible and still include requests for all information desired for this study. The inquiry forms were presented to a few teachers to test the validity and clearness of the questionnaire. After the recommendations of the teachers were incorporated into the questionnaire, it was mimeographed and sent along with a letter of explanation to each industrial arts teacher in the state of South Dakota. A

Rapid City High School
Rapid City, South Dakota
February 15, 1949

Dear Mr. Doe:

I am endeavoring to collect data for a graduate thesis on "The Status of Industrial Arts in South Dakota for 1948-49". I am doing my graduate study at Oklahoma A. and M. College under the guidance of Dr. DeWitt Hunt, Head of the Department of Industrial Arts Education and Engineering Shopwork. I plan on completing this study during the summer session of 1949.

In order to complete the data for the study, I need information that you alone can give me. I have prepared the enclosed questionnaire and would be greatly indebted to you if you would fill out and return it at your earliest convenience, in the stamped self-addressed envelope provided.

I would like very much to have a reply from every teacher as it would give a truer picture of the standing of each teacher and school in relation to other schools in the state.

My plans are to prepare and send to each industrial arts teacher in the state of South Dakota a summary of this report as soon as it is complete.

Thanking you for your kind consideration and effort in this matter, I am,

Sincerely yours,

Darrell D. Simmons

DDS/ms

Encl.

School_____ City_____

Inventory value of shop equipment_____

Inventory value of drawing equipment_____

Number of boys enrolled in industrial arts_____ girls_____

Do you use text books?_____

Do you use slide films or movies in instructions?_____

Do you have a shop library separate from the school library?_____

If so, number of books_____

Number of semesters offered in industrial arts_____

Period	Name of Subject Taught	Number in Class	Periods Per Week	Length of Period	Grade in Which Taught
First					
Second					
Third					
Fourth					
Fifth					
Sixth					

Number of college hours in industrial arts Semester_____ Quarter_____

Name_____ Street Address_____

Date_____ City_____

Remarks:

copy of the inquiry form and letter of transmittal may be found on pages 5 and 6. For the convenience of the teacher a self-addressed, stamped, return envelope was included in this letter. A follow-up letter was sent to those teachers who did not return the questionnaire within a reasonable length of time.

The writer kept in mind that the teacher is usually loaded with many duties around the school so the questionnaire was made as brief as possible. The information secured at the state department was tabulated and arranged according to the group. They were then arranged alphabetically and filed for future use in the problem.

This study covers the schools that have industrial arts in the present school curriculum. It deals only with the status of those schools. The methods of research were through the use of the inquiry form and the securing of information from the records at the State Department of Education. It is hoped that the divisions of this study will simplify the data whereby a teacher will be able to locate his group and determine his status with little difficulty in relation to the other schools of the group.

CHAPTER II

PHILOSOPHY OF INDUSTRIAL ARTS

Philosophies of all types of education are changing from year to year. Experienced educators have witnessed a procession of changes in the philosophical points of view, more far-reaching than the preceding generation. The conception of education has changed much from "training for leisure", to the present emphasis on interest and activity. Each step in this change of philosophy has contributed much to the present conception of education.

Part A. Glossary of Terms

Because of the seeming lack of agreement on some of the terms of education, more particularly the new types of education, it is desirable that several of these terms be defined. The sources of these definitions are indicated in the parenthesis at the end of each definition.

Education The development of general intelligence, either by a system of study and discipline, or by the experiences of life. (11, page 26)

Secondary Education The period of education whether public or private, which usually consists of grades seven to twelve or nine to twelve, during which pupils learn to use independently the tools of learning that they have previously mastered, in which education is differentiated in varying degrees according to the needs and interests of the pupils, and which may be either terminal or preparatory. (8, page 495)

Junior High School is a school in which the seventh, eighth, and ninth grades are segregated in a building, or portion of a building, by themselves, possessing an organization and administration of their own that is distinct from the grades above and grades below and are taught by a separate corps of teachers. (12, page 491)

Vocational Education has reference to training for useful employment in trade and industrial, agricultural, business, homemaking, vocational-technical, and other pursuits of less than college grade. (18, page 7)

Industrial Education A generic term including all educational activities concerned with modern industry, its raw materials, products, machines, personnel, and problems. It therefore includes both industrial arts, the general education forerunner of or introduction to vocational industrial

education and the latter also. (7, page 7)

Industrial Arts a. Those phases of general education which deal with industry - its organization, materials, occupations, processes, and products--and with problems resulting from the industrial and technological nature of society. (20, page 2)

b. A study of the changes made by man in the forms of materials to increase their values, and of the problems of life related to these changes. (2, page 5)

c. A group of school subjects taught so as to emphasize the "how" and the "why" of industrial materials and occupations; to give an appreciation of real industrial life situations thereby contributing to education and culture. (6, page 25)

Vocational Industrial Education Those forms of vocational education, the direct purpose of each being to fit the individual for some industrial pursuit or trade. (16, page 547)

Trade and Industrial Education is the name given to courses and programs of shopwork instruction in the text of the Smith Hughes Act. Specifically "trade and industrial" is used in speaking or writing about shopwork courses subsidized by federal vocational education funds. (10, page 2)

It is hoped that the foregoing definitions will serve to guide the reader and to clarify the differences of opinion in regard to the terms as they are used. Three definitions of industrial arts are included to show the different methods of approach to the subject. One originated quite early in the beginning of industrial arts while another one is as recent as 1948.

Part B. Early Philosophy of Industrial Arts

In the high schools of the past, much emphasis was placed on abstract thinking. These schools, by a sort of inertia, have kept on educating in the traditional way - educating boys and girls to do abstract thinking. These conditions do not meet the need or practical demands of society. Industrial arts in the early beginning endeavored to alter this tradition by bringing the school system closer to the needs of society.

Manual Training. This term was the one first used to describe the work that was done in the school program similar to the industrial arts program

of today. Calvin M. Woodard and John T. Runkle were instrumental in starting this type of education. The term "manual training" was used by these men to describe the program established in their respective schools. These schools used the process of analyzation of the material or information to be studied. Instruction was to precede construction, in fact, the latter would take care of itself through the expression to build or make an object. Learn to use the tools, then construct the finished project. Manual training was placed on the same plane as science or mathematics and the same guiding principles were used in the teaching of all these subjects. Manual training was not intended to develop high skills or to prepare for a trade. Rather it was to be considered in the general education field to prepare one so that when a trade was selected, the student would have little difficulty with his progress. All work was from models formed after the Russian system. These constructions by the pupil were usually not useful, that is, they did not have a place in the home or factory. (1, pages 317-322)

Industrial Arts. The term "Industrial Arts" was first used by Charles R. Richards, director of the Manual Training Department at Teachers' College, Columbia University. He used the term in an editorial for the Manual Training Magazine in 1904 and suggested the term be substituted for that of manual training due to the changing view point of its contribution to education. (1, page 453). The disciplinary thought connected with manual training was replaced with the elements of the industries and their contributions to modern civilization. The problem of the schools was to make the life of the school more real, more like the world outside the school. Handwork in the schools cannot take the form in a set course but must be flexible so that it may be adaptable to the life around each particular school. This will mean a variety of school shop courses as are needed by the locality and as many classes as there are

teachers to teach them. Industrial arts as a school subject must justify itself on the same basis as other subjects in that it is an aid to general education. Industrial arts is not a trade training program, but it contributes to education as a whole.

One can see by the philosophy of the early leaders in the field that there were gradual changes leading to the philosophy of industrial arts of today. This philosophy was not developed by one man but rather by leaders in the field who made studies through research so as to improve the total field of education. Experiments were carried on at all times to try out a new scheme or some new idea that was thought to include means for improving education.

Part C. Present Day Philosophy of Industrial Arts

Philosophy is not static, rather it is continually changing to meet the needs of the modern world. Where and when did the present day philosophy originate? It did not originate at any one specific time or place, but was derived from a collection of experiences and ideas that have been tried, revised and tried again. Only by this method are educational leaders able to derive an educational philosophy to fit the conditions of the changing world.

Industrial arts is considered by some to be in its infant period of our present educational system. The philosophy of industrial arts is questioned by different leaders in the field. The American way of life is essentially democratic and industrial. (20, page 37). The aims of general education should be based on those two headings. In order to meet these aims the liberalization of the course of study has been growing continually to meet the demands of industry and a democratic society.

Demands of a Democratic Society. To meet the needs for a democratic society, industrial arts can do much to prepare the student as an individual for

future participation in the complex society. A personnel organization in the shops in which students are given real responsibilities develops leadership and followership abilities and will do much to develop and equip the student for future life. The instructor should endeavor to establish a series of real-life situations, giving the student opportunities to help plan and organize the shop procedures.

Demands of Industry. The ever-changing complexity of industry will test the teacher to the fullest. The divisions of labor, the ever-increasing amount and variety of manufactured goods, and the development of new machine processes are extremely important in the field of industrial arts. Labor has time for recreation due to the shorter working hours so consequently there is need for many home workshops. The student of industrial arts is working and thinking in terms of concrete materials. He learns the processes of construction by first planning for the object to be built followed by systematic construction of the article.

Objectives of Industrial Arts. The school program should be analyzed and definite objectives or aims established. These objectives should be the guide or measuring stick in the industrial arts program. The following quoted statements of objectives may be realized from proper experiences in industrial arts:

1. To explore industry and American industrial civilization in terms of its organization, raw materials, processes and operations, products, and occupations.
2. To develop recreational and avocational activities in the area of constructive work.
3. To increase an appreciation for good craftsmanship and design, both in the products of modern industry and in artifacts from the material cultures of the past.
4. To increase consumer knowledge to a point where students can select, buy, use, and maintain the products of industry intelligently.

5. To provide information about, and--in so far as possible--experiences in, the basic processes of many industries, in order that students may be more competent to choose a future vocation.

6. To encourage creative expression in terms of industrial materials.

7. To develop desirable social relationships, such as cooperation, tolerance, leadership and followership, and tact.

8. To develop a certain amount of skill in a number of basic industrial processes. (20, pages 42-43)

If the teacher of industrial arts will keep these objectives in mind when establishing a course of study, or revising the old course, and adhere to these objectives, then, the demands of society, both democratic and industrial, will be attained.

CHAPTER III

INDUSTRIAL ARTS IN THE NORTH CENTRAL ASSOCIATION SCHOOLS IN SOUTH DAKOTA

The North Central Association was conceived by a group of educators who were aware of the bad conditions that existed in the schools just before the turn of the ninetheenth century. They wanted to better the relationship between the colleges and secondary schools and to improve the standards of schools in the secondary level of education. They believed that this could be done only through organized effort.

Part A. The North Central Association

Industrial arts in the state of South Dakota may be found existing in the two distinct classes of schools in the state. One class or group has established membership in an organization known as the North Central Association. The remainder of the schools did not meet the requirements of the association but do qualify for the state accredited school class. In this chapter the conditions that exist in the schools that have affiliated with the North Central Association will be discussed.

Early History of the North Central Association. Through the efforts of an organization known as "The Michigan Schoolmasters' Club," the North Central Association was conceived and organized. An invitation was sent to educators in ten states: Ohio, Michigan, Indiana, Wisconsin, Iowa, Missouri, Minnesota, Nabraska, and Kansas, to send representatives to a meeting at Northwestern University on March 29 and 30, 1895. This was the first meeting of the North Central Association. (14, page 283).

A constitution was drafted and adopted, officers were elected, and basic

conditions were established for the requirements of schools and colleges which would be eligible for membership in the organization. The basic conditions adopted at the 1895 meeting for the accrediting of schools and colleges are quoted here:

> a. Well-arranged courses of study, the last four years of which are devoted chiefly to Latin, Greek, French, German, English, history, algebra, geometry, and science.
>
> b. A sufficient number of well-trained teachers.
>
> c. Sufficient equipment, consisting of a library, suitable rooms, and a laboratory or laboratories. (13--page 6).

This organization has grown until it is now the guide by which all schools in the area are rated. It has aided in the improving and raising the standards for both the secondary and college levels of educations.

North Central Association Aims. The association has established aims for the schools to use in improving their individual conditions. These aims were established early in the history of the organization and have had a few minor changes to meet the needs of a changing world. The following aims are quoted from the handbook published by the North Central Association in 1948-49.

> The aims of the North Central Association of Colleges and Secondary Schools are: first, to bring about a better acquaintance, a keener sympathy and heartier cooperation between the colleges and secondary schools of this territory; second, to consider common educational problems and to devise the best ways and means of solving them; and third, to promote the physical, intellectual and moral well-being of students by urging proper sanitary conditions of school buildings, adequate library and laboratory facilities, and higher standards of scholarship.
>
> The Association aims to approve only those schools which possess organization, teaching force, standards of scholarship, equipment, and esprit de corps, of such character as will unhesitatingly commend them to any educator, college or university in the territory of the North Central Association. The Association believes, furthermore, that the policies and regulations adopted and the criteria used as bases for the approval of secondary schools should be evaluative in character and should serve to encourage a maximum of growth and development on the part of its member schools. (15--page 3).

The problems of scholastic standing and the acceptance of credits which arise when the student attempts to enroll in a college or university, will be reduced if the student has attended a high school belonging to the association. The aims of the association are to improve the conditions for both the student and the teacher, and to raise the field of education to a higher level.

The North Central Association Standards. The standards of the North Central Association for accrediting schools and colleges are reviewed annually and revisions are made by the committee when deemed necessary. A member of the North Central Association is expected to meet the standards in the Evaluative Criteria. The criteria are published by the North Central Association and distributed to the schools in the area. This information is useful to the school administrators and officials for the purpose of making a self-evaluation of the school plant, faculty, and facilities. In a general way the criteria may be briefly summarized as follows:

a. The school philosophy and objectives should be developed from an analysis of social factors. The staff of each school should establish a philosophy so as to promote the principles and spirit of American democracy. The school objectives should fit the need of the community in regard to its social, economic, religious, recreational and educational institutions as well as the educational needs of youth and adult.

b. The educational program should be broad enough to include development of skills, accumulation of knowledge, improvement of understandings along with the development of interests, taste, appreciations, ideals, and attitudes. The program should include:

(1.) curriculum concerned with orientation, guidance, instruction, and participation of the youth;

(2.) a pupil activity program which would provide an opportunity to develop leadership and stimulate student participation in school organizations;

(3.) the library should be adequate in size, attractive in appearance, and accessible to pupils;

(4.) guidance should be available to all students in problems;

(5.) the instructional program should be so conducted as to produce the desirable characteristics needed for a better life in the community;

(6.) the school should make an evaluation to discover if the desirable outcome has been realized.

c. The teaching staff member should have college degrees and professional training, be prepared adequately in the subject matter they are to teach, and be paid sufficiently high salaries to guarantee distinctive qualities of personality and skill in teaching. Other members of the school body should be well-trained in their respective duties.

d. The administration and supervision of the educational system are the responsibilities of the superintendent and the board of education. It is the duty of this body to see that the successful attainment of the school objectives are reached.

e. There should be a school plant with upkeep and operation adequate for all needs of the school. (15--pages 14-21).

The foregoing criteria are flexible and can be readily adjusted to changing conditions. It should be recognized that individual differences exist among schools and among communities. Criteria must be stimulating and conducive

to educational growth and should provide facilities for continuous self-evaluation along with the incentive to strive toward high goals of achievement. (15--page 4).

Special Requirements for North Central Schools. All members of the instructional staff shall possess a minimum of a Bachelor's Degree or the equivalent. Exceptions are made when recommended by the state committee in the case of teachers of industrial arts and trades courses who are legally qualified to teach in the state and who have had apprenticeship training required in their respective trades. Fifteen semester hours are required in the teaching assignment. In the case of agriculture, home economics and industrial arts, it shall be the responsibility of the state committee to satisfy itself that the teachers are as well qualified as those having fifteen semester hours in the teaching assignment. The four-year high school shall have a minimum of five full-time teachers. The supervisors and administrators shall have a Master's degree and shall make provisions for ample time for administration and supervision. (15--pages 14 to 21).

The constructive influences of the North Central Association upon the quality and performance of the schools belonging to the Association are unquestionable. They have raised the whole level of secondary education during the present century; they have promoted a better understanding between colleges and secondary schools; they have influenced specifically the qualification of teachers, the teacher load, the library facilities, the nature of the school plant, and the policies of boards of education.

Part B. Schools Affiliated with the North Central Association

A list of the schools belonging to the North Central Association was obtained from a pamphlet issued by the State Department of Public Instruction.

The cities in which the schools are located are arranged in alphabetical order. It is hoped that the information given in this table will be helpful in determining the number of schools that would warrant industrial arts work, other than the ones which already have the program.

An Explanation of Table I. Table I lists the schools that belong to the North Central Association, the population of the town or city in which they are located, the enrollment of the high school and the name of the instructor if the school has a course of instruction in industrial arts in its school program. There are fifty-six teachers who teach industrial arts in the forty schools. Ten schools have two or more instructors in the department.

Population of South Dakota Cities and Towns. The population, according to the 1940 census of the cities and towns varies from 418 to 40,832. The population has probably increased considerably for the major portion of the cities, since the 1940 census. These increases would not materially change the over-all picture presented in the table. Twenty-three towns are below 1,000 population in size. Seventeen of these small towns do not have industrial arts in the school system. There are nineteen cities with over 1,000 population that do not have industrial arts. The population of the town in which one of the schools is located is not given because it is a consolidated school, located in a very small town which is not listed in the 1940 census figures.

High School Enrollment. The total enrollment of all the schools in the North Central Association is 17,429 compared to the enrollment of 12,316 in the schools which offer industrial arts. This leaves 5,113 students that do not have access to instruction in industrial arts. The greatest enrollment of any one school is 1,800 with the least enrollment being twenty-two. The lowest enrollment for a school which offers industrial arts is sixty-six students.

TABLE I
A LIST OF THE NORTH CENTRAL SCHOOLS
IN SOUTH DAKOTA FOR THE SCHOOL YEAR 1948-49

Name of City	Population 1940 Census	Enrollment-High School, Grades 9-12 Inclusive	Teacher
Aberdeen, Central	17,015	1006	Joseph Little Ben Miller Warren Messman
Alcester	581	147	No industrial arts
Alexandria	746	74	Francis Gebhart
Arlington	1,156	146	Supt. O. A. Shuck
Armour	1,013	126	Clifford W. Smith
Belle Fourche	2,496	305	Owen Willis
Beresford	1,642	205	A. F. Tonn
Britton	1,500	182	No industrial arts
Brookings	5,346	413	Roy S. Sterrett
Bryant	658	77	David W. Evans
Canistota	665	68	No industrial arts
Canton	2,518	187	Robert Tupper
Centerville	1,046	129	V. Dwane Clodfelter
Chester	-----	53	No industrial arts
Clark	1,291	153	Warren Miller
Clear Lake	997	162	No industrial arts
Colome	509	109	No industrial arts
Custer	1,845	184	A. E. James
Deadwood	4,100	185	J. Ora Horsfall
DeSmet	1,016	130	No industrial arts
Doland	542	99	Supt. N. N. Berg
Edgemont	1,002	86	Alfred Thomas
Egan	418	100	No industrial arts
Elk Point	1,483	132	Fred Mohr
Eureka	1,457	161	H. H. Stein
Faith	522	66	Paul Bunt
Faulkton	747	110	No industrial arts
Flandreau	2,212	190	No industrial arts
Garretson	666	122	No industrial arts
Gettysburg	1,324	176	No industrial arts
Gregory	1,246	146	No industrial arts
Groton	946	128	No industrial arts
Highmore	1,136	145	Prin. Michael Gieb
Hot Springs	4,083	268	Wendell D. Handley
Howard	1,193	113	No industrial arts
Huron	10,843	555	J. Richard Kearns Marvin Elliott
Ipswich	1,002	135	No industrial arts
Kimball	997	100	No industrial arts
Lake Preston	886	100	Supt. Ralph F. Galer
Lead	7,520	419	Franklin H. Brust Orland P. Cook
Lemmon	1,781	263	No industrial arts
Lennox	1,164	128	No industrial arts
Madison, Central	5,018	232	Maynard F. Hack

Table I (Continued)

Name of City	Population 1940 Census	Enrollment-High School, Grades 9-12 Inclusive	Teacher
Milbank	2,745	251	Harold White
Miller	1,460	207	No industrial arts
Mitchell	10,633	481	Patrick A. White Delbert R. Thompson
Mobridge	3,008	233	Albert F. Mattice Willard L. Nogle
Montrose	506	79	No industrial arts
Onida	597	105	No industrial arts
Parker	1,244	139	No industrial arts
Parkston	1,305	198	No industrial arts
Pierre	4,322	303	Marvin Burroughs Leland White
Platte	1,017	145	Delmer J. Dooley
Rapid City	13,844	1,030	A. E. Anderson S. C. Sorensen Darrell D. Simmons
Redfield	2,428	238	Melvin Buck
Salem	1,185	87	No industrial arts
Scotland	1,204	181	Ed Pniak
Sioux Falls, Washington	40,832	1,800	Earl Bowen Clark Close Dayton Goldsmith Elmer Hanson Paul Hutton
Sioux Falls, All Saints		22	No industrial arts
Sioux Falls, Cathedral		302	Sister M. Clotildis
Sisseton	2,513	291	No industrial arts
Spearfish	2,139	218	Joe Rygg
Spencer	617	67	No industrial arts
Sturgis	3,008	287	No industrial arts
Tyndall	1,289	123	No industrial arts
Vermillion	3,324	265	R. R. Ruelle
Viborg	659	100	No industrial arts
Volga	632	95	No industrial arts
Wagner	1,319	154	No industrial arts
Wakonda	451	68	No industrial arts
Watertown	10,617	663	R. F. Grose Floyd Spilde Melvin Hanson
Waubay	882	106	No industrial arts
Webster	2,173	236	John R. Brunner
Wessington	516	75	No industrial arts
Wessington Springs	1,352	168	No industrial arts
Wilmot	628	98	Prin. Sebastian G. Fix
Winner	2,426	281	No industrial arts
Yankton	6,798	418	Laurence Bush W. B. Thrall

There are in this group twenty-nine schools that have an enrollment of one-hundred or more students, without industrial arts programs. Five of the twenty-nine schools have over two-hundred students enrolled.

The Present Industrial Arts Installations. Forty of the seventy-eight schools which belong to the North Central Association have a program of industrial arts in the school. There is need for more industrial arts departments in the remaining thirty-eight schools. According to the school enrollment twenty-nine of the thirty-eight schools not now having an industrial arts program are large enough for industrial arts to be added to the present curriculum.

Possibilities for the Future. A survey was made by the South Dakota Education Association to determine the number of prospective teachers that would be graduating from South Dakota institutions during the year 1948-49. It was found that eighteen students majoring in industrial arts would be available for teaching positions. With this number of new teachers entering the profession in the state, many new departments should be established. (17--page 328).

The industrial arts work in the North Central Association schools for the state of South Dakota has not reached all of the students that it should. There are twenty-nine schools that are large enough so that industrial arts may be included in the school curriculum. The problem of teacher shortage may be the reason why some of these schools do not have industrial arts. It is hoped that the new men coming into the profession will be instrumental in starting new shops in some of the larger schools in the state, that do not have industrial arts.

Part C. Data Concerning the North Central Schools

In compiling the information concerning the schools of the North Central Association, the following tables have been constructed to show to the best

advantage the relationship of schools, staff and student enrollment. Accompanying each table there is an explanation of the outstanding characteristics of each problem. The source of the information reported in these tables is secured from the files at the State Department and from the questionnaires that were sent to the industrial arts teachers in the state of South Dakota.

TABLE II
ENROLLMENT IN SCHOOLS TEACHING INDUSTRIAL ARTS
IN THE NORTH CENTRAL ASSOCIATION

School Enrollment	Number of Schools	Per cent of Total Enrollment
Below 100	6	4.0
100 - 199	13	16.0
200 - 299	9	17.45
300 - 399	3	7.4
400 - 499	4	14.08
500 - 599	1	4.51
600 - 699	1	5.38
700 - 799	0	
800 - 899	0	
900 - 999	0	
Over 1000	3	31.18
Total	40	100.00

School Enrollment. Table II included the North Central schools which have industrial arts in the school curriculum. The total enrollment of the forty schools in the group is 12,366 pupils. Of this total enrollment, 31.18 per cent of the pupils in the forty schools are enrolled in three of them. There are six schools in which industrial arts is taught that have below one-hundred students enrolled. The greatest number of schools have an enrollment from one-hundred to one-hundred ninty nine. These thirteen schools represent 17.45 per cent of the total enrollment. These figures are based on the four year high school and do not include the attendance of the seventh and eighth grades.

Industrial Arts Class Size. In Table III seventeen classes or 9.8 per cent of the total number of classes have nine or less in enrollment. Only three

classes have an enrollment of from thirty-six to forty students. This represents 1.7 per cent of the total number of classes. There are no classes with more than forty enrolled. Thirty-one and three tenths per cent of the total number of classes have an enrollment size of between sixteen and twenty; closely followed by 23.2 per cent having a class enrollment of from ten to fifteen.

TABLE III
SIZE AND NUMBER OF INDUSTRIAL ARTS CLASSES IN THE NORTH CENTRAL ASSOCIATION HIGH SCHOOLS

Size of Class	Number of Classes	Per Cent of Total No. Classes
1 - 9	17	9.8
10 - 15	40	23.2
15 - 20	54	31.3
21 - 25	34	19.6
26 - 30	17	9.8
31 - 35	8	4.6
36 - 40	3	1.7
Over 40	0	
Total	173	100.0

From these figures one can see that 74.1 per cent of the classes have reasonable class sizes of from ten to twenty five. Only 16.1 per cent have a class size that would be considered too large for best instruction purposes. The average class size in the North Central schools is seventeen to eighteen students.

Value of Shop Equipment. The inventory value of shop equipment is listed in Table IV. There were in this group five schools from which there were no returns, and three schools that did not offer shop work. Only two schools listed the shop inventory value of less than $500. The greatest percentage or eight of this group had an inventory value between $2000. and $2999. One school had an inventory value of $230,000. This school is fortunate in that it is located near the Homestake Mine, one of the largest gold mines in the world. The officials of this mine take great interest in the school, especially

the shop work and aid it whenever possible. They secure a large portion of their workers from the graduates of the high school. This school has two

TABLE IV
VALUE OF SHOP EQUIPMENT
IN THE NORTH CENTRAL ASSOCIATION SCHOOLS

Cost of Equipment	No. of Schools
Below - $ 200	0
$ 201 - 499	2
500 - 749	4
750 - 999	1
1000 - 1499	0
1500 - 1999	4
2000 - 2999	8
3000 - 3999	2
4000 - 4999	0
5000 - 5999	2
6000 - 6999	0
7000 - 7999	4
8000 - 8999	0
9000 - 9999	1
10000 - 19999	2
20000 - 74999	1
Over 75000	1
No shop	3
Not reported	5
Total	40

instructors in the industrial arts work. They have one of the best equipped and arranged school shops in the state. The enrollment for this school is 419, with 140 boys taking advantage of the well-equipped department.

Teacher Salary. The salaries for teachers in schools which belong to the North Central Association are given in Table V. One instructor was a half-time teacher so his salary was doubled in order to get all teachers on a full-time basis. One teacher was a Sister in a parochial school; therefore, her salary was listed as not reported in this table. One teacher's salary was not given at the state department. There were in this group three superintendents and two principals which may account for the higher salaries in

this table. A few instructors reported an annual salary plus a house, so the writer added $400. to the reported salary. The greatest percentage or fifteen

TABLE V
SALARY OF INDUSTRIAL ARTS TEACHERS
IN THE NORTH CENTRAL ASSOCIATION SCHOOLS

Salary Per Year	No. of Teachers
Below -$2500	0
$2500 - 2749	1
2750 - 2999	6
3000 - 3249	14
3250 - 3499	15
3500 - 3749	11
3750 - 3999	4
Over - 4000	3
Not reported	2
Total	56

of the fifty-six teachers have an annual salary of from $3250. to $3499. The largest salary listed for a full-time industrial arts teacher was $3832. The writer was unable to give a comparison with the state schedule for as yet the state does not have an adopted salary schedule.

Teacher Load. The number of periods taught by each teacher in industrial arts are given in Table VI. These figures do not mean that the instructor is

TABLE VI
TEACHER LOAD FOR VARIOUS NUMBER OF PERIODS OF INDUSTRIAL
ARTS CLASSES IN NORTH CENTRAL ASSOCIATION SCHOOLS

No. Classes Per Day in Ind. Arts	No. of Teachers
One	8
Two	6
Three	12
Four	4
Five	18
Six	4
Seven	1
Eight	2
Not Reported	1
Total	56

teaching only the number of periods indicated per day. He may be teaching the remainder of the periods in some other subject or as in one case, be a half-time instructor. One instructor's class schedule was not returned in the questionnaire. The greatest number of teachers in this group teach five periods of industrial arts daily. This would indicate that of the group twenty-five teachers teach only industrial arts, while the remaining thirty-one may serve in some supervisory capacity or teach other subjects.

Value of Mechanical Drawing Equipment. Table VII gives the inventory value of mechanical drawing equipment. There were five schools that did not report, and two schools reported no mechanical drawing equipment. This indicates that the two schools with no equipment and some that reported very small

TABLE VII
VALUE OF MECHANICAL DRAWING EQUIPMENT
FOR THE NORTH CENTRAL ASSOCIATION SCHOOLS

Cost of Equipment	No. of Schools
None	2
$ 1 - $ 74	5
75 - 149	5
150 - 299	7
300 - 499	1
500 - 749	8
750 - 999	1
1000 - 1999	4
2000 - 2999	1
3000 - 3999	1
Over - 4000	
Not reported	5
Total	40

inventories do not teach drawing, but use the equipment in shop work for the construction of working drawings. According to the class schedule nineteen schools were giving instructions in mechanical drawing. This would leave twenty-one schools that teach only shop work. One school reported a value of over $3000. The greatest number of schools reported between $500. and $749.

for mechanical drawing equipment. Some of the small schools indicated that they alternated shop work and drawing each year or semester.

Qualification of Industrial Arts Teachers. The number of degrees for industrial arts teachers are given in Table VIII. The greatest percentage

TABLE VIII
QUALIFICATION OF INDUSTRIAL ARTS TEACHERS
IN NORTH CENTRAL ASSOCIATION SCHOOLS

College Degree	No. of Teachers
B.S. or A.B.	32
B.S. or A.B. plus summer work	13
M.S. or M.A.	10
M.S. or M.A. plus summer work	1
Ph.D.	
Total	56

or thirty-two of the fifty-six teachers have the B.S. or A.B. Degree or the equivalent. Thirteen instructors have had some graduate work, while ten teachers have Master's Degrees. One instructor has had work in addition to the Master's Degree. All of the instructors qualify in this respect, according to the standards of the North Central Association. Up to this time all teachers who desire graduate work in industrial arts were compelled to go outside the state for training, as there were no schools which gave graduate work of this type in the state of South Dakota.

Length of Class Period. The length of the class period is shown in Table XI. Some schools have three hour periods in Trades and Industry with the regular industrial arts classes being a single or double period. The writer based the period length for the school upon the length of the greatest number of periods. Four schools had a double period in industrial arts work. The majority or twenty-eight schools indicated a class period of from fifty to

sixty minutes. Only six schools have a period length of forty-five minutes.

TABLE IX
LENGTH OF CLASS PERIOD IN THE
NORTH CENTRAL ASSOCIATION SCHOOLS

Length of Period	No. of Schools
180 Min. (3 hours)	1
120 Min. (2 hours)	0
90 Min. (2-45 Min.)	4
61 - 70 Min.	0
50 - 60 Min.	28
45 Min.	6
Below 45 Min.	0
Not reported	1
Total	40

Number of Units of Industrial Arts Offered. The number of high school units of industrial arts offered in the schools may be found in Table X.

TABLE X
NUMBER OF INDUSTRIAL ARTS UNITS OFFERED IN
THE NORTH CENTRAL ASSOCIATION SCHOOLS

No. of High School Units	No. of Schools
1 unit	1
2 units	7
3 units	1
4 units	12
5 units	0
6 units	4
7 units	1
8 units	4
9 units	0
10 units	0
11 to 15 units	3
Over 15 units	2
Not reported	5
Total	40

Three of the schools did not return the questionnaire, and two did not fill in the information requested. The greatest number or twelve schools offer four units of industrial arts. Two schools offer over fifteen units. One

school reported an unlimited number due to the wide scope of shop facilities. Only one school offered one unit of industrial arts in this group.

Teacher Preparation in Industrial Arts. Table XI gives the number of college hours the instructor has in industrial arts. The number of college quarter hours were converted to a semester hour basis. Seven teachers reported no

TABLE XI
THE NUMBER OF COLLEGE HOURS THE TEACHER HAS IN INDUSTRIAL ARTS

No. of College Hours	No. of Teachers
None	7
1 - 10	4
11 - 19	8
20 - 29	7
30 - 39	12
40 - 49	7
Over 49	11
Not reported	0
Total	56

college credits in industrial arts but four made note as to the special training they have had. Four agriculture teachers are included in the fifty-six teachers in this group and indicate a small number of hours in industrial arts. These teachers are teaching one or two classes of industrial arts along with the agricultural subjects. Eleven instructors indicated over forty-nine semester hours of industrial arts work. According to the table thirty instructors out of the fifty-six have a major in industrial arts and approximately fifteen have a minor. This would indicate that the state committee had to make a ruling on eleven of the teachers of this group who did not meet the requirements of the North Central Association.

Industrial Arts Activities. Table XII gives the names of the shop activities with the number of schools that offer each activity. The courses listed

are varied and many in number. Twenty-seven activities are listed for the North Central schools with many of the titles referring to the same type of

TABLE XII
INDUSTRIAL ARTS ACTIVITIES IN THE
NORTH CENTRAL ASSOCIATION SCHOOLS

Name of Activity	No. of Schools Offering Each Subject
Shop	13
Mechanical Drawing	13
Wood Shop	8
Woodworking	8
Manual Training	7
Industrial Arts	6
Drawing	4
Radio	4
General Shop	3
Metals	2
Carpentry	2
Home Mechanics	2
Machine Shop	2
General Metals	2
Cabinet Making	2
Blue Print Reading	1
Vocational Education	1
Woodwork and Drawing	1
Industrial Shop	1
Industrial Arts, Metal	1
Metal Shop	1
Sheet Metal	1
Wood Turning	1
Period Reproduction	1
Upholstery	1
Core - 7th Grade	1
Not Reporting	4

activity. Thirteen schools refer to the shop activity as "Shop". Eight use the term "Wood Shop", with eight using the term, "Woodworking". Mechanical drawing seems to be an accepted term with the only other name listed as "Drawing". The older term "Manual Training", was used in seven cases with the term, "Industrial Arts", being used only six times. "Core" was used by the representative of one school to indicate the shop work for the seventh grade. This course is exploratory and along the "General Shop" plan. Four teachers did not give the information desired.

Teaching Combinations. The different teaching combinations of the industrial arts teachers in the North Central Schools are shown in Table XIII.

TABLE XIII
VARIOUS TEACHING COMBINATIONS
IN THE NORTH CENTRAL ASSOCIATION SCHOOLS

Teaching Combinations	No. of Teachers
Industrial Arts	26
Industrial Arts - T. and I. or D. O.	8
Industrial Arts - Mathematics	4
Industrial Arts - Agriculture	4
Industrial Arts - Superintendent	2
Industrial Arts - Science - Athletics	2
Industrial Arts - Math - Coach	1
Industrial Arts - Supt. - Science	1
Industrial Arts - History	1
Industrial Arts - History - Coach	1
Industrial Arts - Principal - Coach	1
Industrial Arts - Business Education	1
Industrial Arts - Science	1
Industrial Arts - Principal - History	1
Not reported	2
Total	56

Twenty-six teachers of this group teach only industrial arts, with eight teaching industrial arts together with a day trades class or the distributive education work. Five instructors teach industrial arts, one other subject and have coaching duties. Three superintendents and two principals teach industrial arts. Four of the instructors teach the agriculture - industrial arts combination.

Use of Textbooks. The results of Table XIV were based on the report of the individual teacher. In some schools textbooks are used in the mechanical drawing classes and this may or may not be the case in shopwork. One instructor reported using textbooks that were his personal property. From information given by the forty-seven teachers that reported, thirty-seven indicated the use of textbooks for instructional purposes. Five teachers said they used them to some extent and five reported that they did not use

textbooks. Two of this number said that they used only reference books.

TABLE XIV
USE OF TEXTBOOKS FOR INSTRUCTION
IN THE NORTH CENTRAL ASSOCIATION SCHOOLS

Use of Textbooks	No. of Teachers
Yes	37
No	5
Some	5
Not reported	9
Total	56

Use of Films for Instruction. In Table XV the use of film or film strips for the teaching of industrial arts is indicated for the North Central Schools. Eleven of this group reported that they were using films occasionally. Fifteen instructors said that they were using films for instruction. Thirty-eight of the forty schools in this group own a film projector.

TABLE XV
USE OF FILM OR FILM STRIPS
IN THE NORTH CENTRAL ASSOCIATION SCHOOLS

Use of Film	No. of Teachers
Yes	16
No	20
Some	11
Not reported	9
Total	56

Upon close examination of the preceding data the teacher of industrial arts in South Dakota may make a comparison of himself, his department and his school with the rest of the schools in the state. The tables will provide valuable information to aid in describing the program of industrial arts to the school officials, when new courses are to be established or new departments are to be decided upon. Many school officials are under the impression that it takes a large amount of money to start an industrial arts program in the schools. The simplest industrial arts establishment in which four to six industrial arts subjects are offered will cost from $1000. to $5000.

CHAPTER IV

ACCREDITED HIGH SCHOOLS NOT MEMBERS OF THE NORTH CENTRAL ASSOCIATION

All high schools in the state not members of the North Central Association meet the requirements for state accredited school membership. Members of this group of schools are usually smaller in enrollment than those that belong to the North Central Association. They are located in smaller towns and communities. This group includes 232 high schools accredited by the State Department of Education. Industrial arts is found in some form in forty-nine of these schools.

Part A. Standards for the State Accredited Schools

In an effort to increase the efficiency of the schools that are not members of the North Central Association, the state of South Dakota has established standards similar to those of the association. These standards are less rigid than those of the association and are considered a stepping stone on the way to becoming members of the North Central Association. Some of the schools in this group are very small with a teaching staff of one to four or five teachers, which may be the only limiting factor that prevents them from becoming members of the North Central Association. The opinion is frequently advanced that this accrediting idea has done much to develop and improve the smaller schools of the state.

All high schools of the state, in order to be considered for accrediting, must send in the regular Preliminary High School Report Blanks to the high school supervisor at the state department before October 5. These reports are studied by a committee appointed by the State Department of Public

Instruction. This committee approves or rejects the schools for accreditment. The standards for accrediting a high school in the State of South Dakota are as follows:

School Plant. The school plant shall be adequate for the number of pupils enrolled and the program of studies offered. The heating, lighting, the ventilation of the rooms, the nature of the lavatories, the water supply, and the school furniture shall be such as to insure hygienic conditions for both teacher and pupil.

School Libraries. Each school shall have a library managed by a well educated, efficient librarian who makes provisions for keeping all material catalogued and well organized. The minimum standards for a four year high school with an enrollment over two hundred shall be one thousand books with an appropriation of $200. a year. For a four year high school whose enrollment is under two hundred, the minimum number of books shall be seven hundred and fifty with a minimum appropriation of $100.

Laboratories. The laboratories should have adequate appropriations for the maintenance of apparatus and equipment. The industrial arts department should have adequate space for benches, lumber storage with a paint room and tool cabinets.

Selection and Tenure of Superintendents and Teachers. It shall be the policy of the board of education to employ and retain well qualified, competent teachers who hold South Dakota teaching certificates. All teachers in South Dakota high schools shall have the equivalent of graduation from an accredited college. The teachers shall teach in their major and minor subjects. The high school teachers must hold a high school general, a high school special,

or a high school permanent certificate. The head of the school system must have earned six semester hours of graduate credit in the field of administration and supervision. He must have had three years of successful teaching experience in secondary schools.

Preparation of the High School Faculty. All teachers in accredited schools must teach in those fields in which they have had adequate preparation. The teacher must have fifteen semester hours of preparation in the subject which he is teaching.

Requirements for Graduation. The school must have one hundred and seventy teaching days in the school calendar. All students must have a minimum of fifteen units to meet graduation requirements. The school must be prepared to give courses in English I, II, III; Algebra I; United States History, Civics, or United States Government; and enough other subjects so the student may be able to secrure fifteen units.

Teacher Load. No teacher shall have over one hundred and fifty pupils per day with a maximum number that may be enrolled in one class of thirty-five pupils. The length of period shall not be less than forty minutes.

School Records, Accounting, and Safe Keeping. Permanent records shall be kept for each pupil's scholarship and attendance in a fire-proof safe or vault in the office of the superintendent. An official transcript of the college preparation of each teacher shall be kept on file. (4, pages 6-26).

Of the three hundred and ten high schools in the state two hundred and thirty-two belong to this type. Forty-nine schools of the accredited group offer industrial arts courses which are taught by fifty-four teachers. There are no high schools in the state that are not accredited by the State Department.

Part B. Schools Affiliated with the State Accredited Group

In order that the reader may more fully understand the conditions existing in the state for the smaller schools, a table has been arranged (see Table XVI) in order to provide complete information on the schools in question. With the aid of this table it is possible to locate the larger schools in this group that do not have industrial arts work. The possibilities for the development of future departments of industrial arts in the schools which have an enrollment large enough to warrent this type of work can be determined.

An Explanation of Table XVI. The cities in which the schools are located are arranged in alphabetical order for the convenience of the reader. The high schools usually have the same name as the town in which they are located, however, when this is not the case the name of the school is given after the name of the city in which it is located. The population for the city is given in the second column and the high school enrollment may be found in the third set of figures. When industrial arts is found to be offered in a school the name of the teacher is given in the last column.

The Population of South Dakota Cities and Towns. The population for Table XVI was secured from the 1940 census. There were forty schools located in the rural area, therefore they were not listed in the 1940 census. There are no towns listed with less than 100 population. Forty of the schools in this group are located in a town or city where there are two or more schools. All towns, except two, with populations above 1000 support two high schools. Only one of these two schools offers industrial arts. It should be kept in mind that many of these towns may have gained or lost population since the 1940 census.

TABLE XVI
A LIST OF THE ACCREDITED SCHOOLS
IN SOUTH DAKOTA IN THE SCHOOL YEAR 1948-49

Name of City	Population 1940 Census	Enrollment High School Grades 9-12 inc.	Teacher
Aberdeen, Sacred Heart	17,015	28	No industrial arts
Aberdeen, St. Mary's		46	No industrial arts
Agar	142	29	No industrial arts
Alpena	440	58	No industrial arts
Amherst, Weston		14	Supt. I. F. Balsiger
Andover	350	59	Leslie Wayne Peterson
Ardmore	195	9	No industrial arts
Argonne		30	No industrial arts
Artesian	502	74	No industrial arts
Ashton	240	19	No industrial arts
Astoria	214	54	F. G. Reuter
Athol		14	No industrial arts
Avon	728	91	Supt. Gordon L. Hansen
Baltic	270	40	No industrial arts
Bancroft	126	29	No industrial arts
Barnard		38	Not reported
Bath		26	No industrial arts
Belvidere	187	31	Deceased Feb. 1949
Big Stone City	681	66	No industrial arts
Bison		64	No industrial arts
Blunt	322	36	No industrial arts
Bonesteel	532	68	No industrial arts
Bonilla		29	Supt. O. A. Nachtigall
Bowdle	757	88	No industrial arts
Bradley	311	38	No industrial arts
Brandon		71	No industrial arts
Brentford		55	Supt. Glen E. Peterson
Bridgewater	790	106	No industrial arts
Bristol	675	94	Ralph Bartholow
Buffalo		54	No industrial arts
Burbank		7	No industrial arts
Burke	602	136	No industrial arts
Canova	333	56	No industrial arts
Canton, Augustana	2,518	208	Prin. G. H. Erickson
Carthage	512	66	No industrial arts
Castlewood	493	61	No industrial arts
Cavour	138	31	No industrial arts
Chamberlain	1,626	158	Charles House
Chancellor	232	32	No industrial arts
Cheyenne Agency		70	Wilbur House
Claremont	271	43	No industrial arts
Colman	462	60	Supt. H. W. Woodward
Colton	615	71	Warren Robertson
Columbia	275	44	No industrial arts
Conde	395	52	No industrial arts
Corona	177	23	No industrial arts

Table XVI (continued)

Name of City	Population 1940 Census	Enrollment High School Grades 9-12 inc.	Teacher
Corsica	452	97	No industrial arts
Cresbard	288	72	No industrial arts
Dallas	278	32	Supt. O. R. Gretschmann
Davis	230	22	No industrial arts
Dell Rapids	1,706	102	LeRoy Healey
Del Rapids, St. Mary's		74	No industrial arts
Delmont	461	69	No industrial arts
Draper	190	32	P. B. Sampson
Dupree	460	55	No industrial arts
Eagle Butte	374	75	No industrial arts
Eden	171	15	No industrial arts
Elkton	779	83	No industrial arts
Emery	482	41	Verle Heiter
Erwin	182	35	No industrial arts
Estelline	627	87	No industrial arts
Ethan	324	60	Supt. Thomas H. Jones Baltus Fritzemeier
Fairfax	338	59	No industrial arts
Farmer, Edgerton	130	47	No industrial arts
Fedora		33	No industrial arts
Flandreau, Indian Voc.	2,212	450	Raymond G. Biron William J. Jelliffe Ralph R. Julian Charles K. McCelland
Florence	254	39	No industrial arts
Forestburg		25	No industrial arts
Fort Pierre	764	57	Thurston Markle
Fort Thompson, Indian		24	No industrial arts
Frankfort	335	33	No industrial arts
Frederick	242	61	No industrial arts
Freeman	976	98	Albert Schwartz
Freeman, Academy		114	Lewis Linscheid Gerhard Toews
Fulton	168	33	No industrial arts
Fulton, Plano		32	No industrial arts
Gann Valley, Elvira		19	No industrial arts
Garden City	272	50	No industrial arts
Garden City, Thorp		11	No industrial arts
Gary	566	47	Maynard Cochrane
Gary, School for Blind		8	No industrial arts
Gayville	278	67	Robert C. Wakefield
Geddes	581	85	No industrial arts
Glenham	131	54	No industrial arts
Goodwin	152	58	No industrial arts
Grenville, St. Joseph	260	28	No industrial arts
Harrisburg	241	60	Supt. Earl DeVault
Harrold	229	43	No industrial arts
Hartford	647	49	Supt. Bernard Dahlen
Hayti	370	50	No industrial arts

Table XVI (continued)

Name of City	Population 1940 Census	Enrollment High School Grades 9-12 inc.	Teacher
Hazel	182	53	No industrial arts
Hecla	555	76	No industrial arts
Henry	322	68	No industrial arts
Herreid	592	120	No industrial arts
Hetland	199	18	No industrial arts
Hill City		82	No industrial arts
Hitchcock	246	34	No industrial arts
Hosmer	579	57	No industrial arts
Hoven	369	98	No industrial arts
Howard, St. Agatha	1,193	61	No industrial arts
Hudson	478	70	Supt. Lyle Pearson
Humboldt	417	125	No industrial arts
Hurley	586	113	No industrial arts
Huron, St. Teresa	10,843	16	No industrial arts
Igloo, Provo		99	Vernon J. Clark
Interior	182	23	No industrial arts
Irene	391	114	No industrial arts
Iroquois	413	44	No industrial arts
Isabel	490	51	No industrial arts
Java	493	64	John Woodruff
Jefferson	469	60	No industrial arts
Kadoka	464	72	No industrial arts
Kennebec	390	29	No industrial arts
Keystone		8	No industrial arts
Kidder		50	No industrial arts
Lake Andes	785	73	No industrial arts
Lake City	168	26	No industrial arts
Lake Norden	463	59	No industrial arts
Lane	214	39	No industrial arts
Langford	452	68	No industrial arts
Lebanon	310	17	No industrial arts
Leola	795	107	No industrial arts
Letcher	344	75	No industrial arts
Lily	158	28	No industrial arts
Lyons		85	Joseph Burcham
Madison, Eastern	5,018	103	No industrial arts
Madison, Franklin		31	Supt. Donald I. Brummel
Madison, Orland		29	No industrial arts
Marion	765	108	No industrial arts
Martin	1,013	148	No industrial arts
Marty, St. Paul's		99	No industrial arts
McIntosh	626	78	No industrial arts
McLaughlin	660	131	No industrial arts
Meckling	144	49	Supt. D. J. Gilliland
Mellette	332	27	No industrial arts
Menno	966	95	No industrial arts
Midland	282	40	No industrial arts

Table XVI (continued)

Name of City	Population 1940 Census	Enrollment High School Grades 9-12 inc.	Teacher
Mission, Todd	452	100	Cecil Rawson
Mission, Rosebud		50	No industrial arts
Mitchell, Notre Dame	10,633	211	No industrial arts
Monroe	219	26	No industrial arts
Mount Vernon	405	78	No industrial arts
Murdo	680	74	John Jaide
New Effington	344	46	No industrial arts
Newell	683	122	No industrial arts
New Underwood	214	78	No industrial arts
Nisland	212	50	No industrial arts
Northville	223	48	No industrial arts
Oelrichs	212	17	No industrial arts
Okaton		16	No industrial arts
Oldham	386	71	No industrial arts
Onaka	139	15	No industrial arts
Orient	250	42	Supt. H. J. Grossnickle
Orient, Fairview		23	No industrial arts
Peever	272	36	No industrial arts
Philip	833	111	Charles H. Pegelow
Pickstown		32	No industrial arts
Piedmont		21	No industrial arts
Pierpont	362	42	No industrial arts
Pine Ridge, Holy Rosary		85	No industrial arts
Pine Ridge, Oglala		124	Vier Cleek
Plankington	694	98	No industrial arts
Plankington, State Trn. School		43	Prin. O. J. Haney
Pollock	527	73	No industrial arts
Presho	568	64	No industrial arts
Pukwana	258	31	No industrial arts
Quinn	189	49	No industrial arts
Ramona	265	31	No industrial arts
Rapid City, Cathedral	13,844	108	No industrial arts
Ravinia	155	54	No industrial arts
Raymond	206	30	No industrial arts
Raymond, Logan		22	No industrial arts
Redfield, Plainview	2,428	89	No industrial arts
Ree Heights	258	26	No industrial arts
Reliance	219	47	No industrial arts
Revillo	325	84	No industrial arts
Roscoe	608	54	No industrial arts
Rosholt	362	68	No industrial arts
Roslyn	253	54	No industrial arts
Rutland		73	No industrial arts
St. Charles		15	No industrial arts
St. Francis, Mission	273	73	No industrial arts
St. Lawrence	297	51	No industrial arts
Salem, St. Mary's	1,185	94	No industrial arts
Selby	599	65	No industrial arts

Table XVI (continued)

Name of City	Population 1940 Census	Enrollment High School Grades 9-12 inc.	Teachers
Sinai	182	40	No industrial arts
South Shore	246	22	No industrial arts
Springfield	667	92	Prin. Alan Paulson
Springfield, St. Mary's		40	No industrial arts
Stephan, Immaculate Conception		27	No industrial arts
Stickney	361	53	Harry J. Harvison
Strandburg	177	52	No industrial arts
Stratford	205	24	No industrial arts
Sturgis, St. Martin's	3,008	94	Sister M. Bonaventure
Summit	459	55	No industrial arts
Tabor	391	39	Supt. Clinton H. Halle
Thomas		40	No industrial arts
Timber Lake	512	97	No industrial arts
Toronto	362	45	No industrial arts
Trent	240	35	No industrial arts
Tripp	913	73	No industrial arts
Tulare	244	34	No industrial arts
Turton	180	31	No industrial arts
Vale		35	No industrial arts
Valley Springs	396	41	John Tameris
Veblen	486	75	No industrial arts
Vienna	313	41	No industrial arts
Virgil	145	34	No industrial arts
Violin	292	26	No industrial arts
Wakpala		35	No industrial arts
Wall	500	57	No industrial arts
Wallace	193	30	No industrial arts
Warner		31	Oliver G. Boe
Wasta	153	19	No industrial arts
Watertown, Immaculate Conception	10,617	32	No industrial arts
Waverly		18	No industrial arts
Wentworth	303	20	No industrial arts
Wessington Springs, College High School	1,352	67	No industrial arts
Westport		32	No industrial arts
White	559	82	No industrial arts
White Lake	496	71	Clarence M. Kelsey
White River	562	64	Supt. Gilbert W. Neiles
Willow Lake	427	111	No industrial arts
Witten		31	No industrial arts
Winfred	245	35	No industrial arts
Wolsey	410	58	No industrial arts
Wood	414	37	No industrial arts
Woonsocket	1,050	107	No industrial arts
Worthing	291	26	Supt. P. R. Jost
Yale	156	31	Bernard Schneller
Yankton, Mount Marty	6,798	174	No industrial arts

High School Enrollment. The total enrollment for the high schools of this group is 13,545 students. The enrollment for the schools that are offering industrial arts in the school program is 3,677 pupils. This leaves 9,868 students that do not have access to industrial arts work. Three schools of this group have an enrollment over 200, but only two of these schools have industrial arts in the school program. Out of the twenty-five schools in this group that have over 100 students enrolled only eight have some form of industrial arts. Forty-one schools which have less than 100 students have industrial arts in the school curriculum.

The Present Industrial Arts Installations. In the 232 accredited schools, 49 have some form of industrial arts. Forty-six of these schools have a one teacher department and the remaining three have two or more teachers in the department. The enrollment of eight of the 49 schools is over 100 students, while the remainder have a pupil enrollment less than 100.

Possibilities of the future. There is great need for more industrial arts work in the schools of this group as only 27.1 per cent of the total enrollment have access to this type of training. According to the enrollment there are seventeen schools of this group that have over 100 students but do not have industrial arts. Forty-one schools with present installations of industrial arts have less than 100 enrolled. If these schools, of which the smallest enrollment is fourteen students, successfully include industrial arts in the school program, then surely those that have over 100 in enrollment could and should have industrial arts in the school curriculum.

There is much that can be done to improve the status of industrial arts in the accredited schools of the state. The problem of teacher shortage may be responsible for some schools not having industrial arts, but this condition

should improve within the next three or four years. The superintendent-industrial arts teaching combination seems to be popular in this size school and should be called to the attention of those training for supervisory work so that they secure training necessary for the teaching of industrial arts. Ideal conditions in regard to industrial arts will not be obtained until the major portion of the students have access to industrial arts training.

Part C. Data Concerning The Accredited Schools

The following tables were constructed from the information that was obtained at the state department and from questionnaires sent to the teachers in the state of South Dakota. The tables are developed to show to the best advantage the relationship of the schools, staff and student enrollment. Accompanying each table there is an explanation of the most significant characteristics of each problem.

School Enrollment. In Table XVII the enrollment is given for the accredited schools of the state of South Dakota that have an industrial arts

TABLE XVII
ENROLLMENT IN SCHOOLS TEACHING INDUSTRIAL ARTS

School Enrollment	Number of Schools	Per cent of Total Enrollment
Below 30	3	1.34
30 - 49	15	15.78
50 - 69	11	17.84
70 - 89	6	11.98
90 - 109	8	20.96
110 - 129	2	6.21
130 - 149	1	3.64
150 - 199	1	4.29
Over 200	2	17.98
Total	49	100.00

program. The smallest school of this group has fourteen pupils, while the largest has 453 students in high school. The greatest number or fifteen

schools have an enrollment between 30 and 49 students. These fifteen schools do not have the greatest percentage of the total enrollment. Eight schools in this group that have a total enrollment between 90 and 109 represent 20.96 per cent of the total pupil enrollment.

Size and Number of Industrial Arts Classes. The size and number of industrial arts classes for the accredited schools are given in Table XVIII. Three teachers did not return the questionnaire. Only one class was found to be larger than 30 in size. Three classes have an enrollment of five or less. Fifty-one classes or 49.51 per cent of this group have a class size between six and ten students. The second largest group of classes range from eleven to fifteen students.

TABLE XVIII
SIZE AND NUMBER OF INDUSTRIAL ARTS CLASSES IN THE ACCREDITED SCHOOLS

Size of Class	Number of Classes	Per Cent of Total No. Classes
1 - 5	3	2.91
6 - 10	51	49.51
11 - 15	37	35.92
16 - 20	7	6.81
21 - 25	1	.97
26 - 30	0	.
31 - 35	1	.97
Over 35	0	.
Not reported	3	2.91
Total	103	100.00

Teacher Class Load. The number of periods taught by each teacher in industrial arts is given in Table XIX. The greatest number of teachers in this group have two periods of industrial arts daily. Nineteen teachers have only one period of industrial arts each day. Only two teachers have five periods of industrial arts each day, which would indicate that they are

the only teachers that are full-time industrial arts teachers.

TABLE XIX
TEACHER LOAD FOR VARIOUS NUMBERS OF PERIODS OF INDUSTRIAL ARTS CLASSES IN ACCREDITED SCHOOLS

No. Classes Per Day in Ind. Arts	No. of Teachers
One	19
Two	20
Three	8
Four	2
Five	2
Six	0
Not reported	3
Total	54

Salary of Teachers. In Table XX the salaries of the teachers who teach industrial arts in the accredited schools are given. In this group six are not reported; four teach in a United States Government school, one is a Catholic sister, and one is a public school teacher whose salary was not reported to the

TABLE XX
SALARY OF INDUSTRIAL ARTS TEACHERS IN ACCREDITED SCHOOLS

Salary Per Year	No. of Teachers
Below $2250	1
$2250 - 2499	0
2500 - 2749	5
2750 - 2999	12
3000 - 3249	12
3250 - 3499	6
3500 - 3749	6
3750 - 3999	6
Over 4000	0
Not reported	6
Total	54

State Department. Nineteen teachers of this group are superintendents of schools and three are principals. Only one teacher in this group received a salary below $2250. annually. There are twelve who received between $2750.

and $2999. and an equal number receive between $3000. and $3249. annually. There are six teachers who receive between $3750. and $4000. a year.

Value of Shop Equipment. The inventory value of shop equipment is listed in Table XXI. There are included in this table four schools that did not report. Two schools of the accredited group taught only mechanical drawing. Of the forty schools that have shop work, only one has an inventory value of shop equipment less than two hundred dollars. One-fourth of the schools have a shop inventory of between $400. and $599. One school lists a shop inventory above $3000.

TABLE XXI
VALUE OF SHOP EQUIPMENT

Cost of Equipment	No. of Schools
Below $200	1
$ 200 - 399	5
400 - 599	13
600 - 799	4
800 - 999	3
1000 - 1499	8
1500 - 1999	2
2000 - 2499	6
2500 - 2999	0
Over 3000	1
No shop (Mechanical Drawing only)	2
Not reported	4
Total	49

Value of Mechanical Drawing Equipment. Table XXII lists the inventory value of mechanical drawing equipment for the accredited schools. Two schools that have mechanical drawing in the school program did not fill in the questionnaire. Twenty schools of the forty-nine listed no mechanical drawing equipment, and according to their class schedule do not teach drawing. The greatest number or eleven of the twenty-seven schools that indicate drawing

equipment have an inventory value of mechanical drawing equipment less than fifty dollars. The greatest value given for any school was between $500. and $600. Some of these schools used the equipment for the construction of working drawings for the shop classes or alternated shop work and drawing each year, because only instructors of ten schools said that they were giving mechanical drawing courses this year.

TABLE XXII
VALUE OF MECHANICAL DRAWING EQUIPMENT

Cost of Equipment	No. of Schools
None	20
Below $ 50	11
$ 50 - $ 99	8
100 - 149	2
150 - 199	1
200 - 249	2
250 - 299	1
300 - 399	1
400 - 499	0
500 - 599	1
Above 600	0
Not reported	2
Total	49

Qualification of Teachers. The training of the industrial arts teachers is given in Table XXIII. Of the fifty-four teachers in the accredited schools, four report no college training. Of this four, one states that he has twenty-eight years of practical experience plus special factory training. One teacher was trained in the Netherlands and is teaching on a special permit from the state department. One of these teachers gave no information on his return, but the files show that he teaches no subject other than two classes of industrial arts daily. One teacher teaches at the Pine Ridge Indian School and did not report any special training that he may have had. Two teachers report seven years of college preparation but do not indicate whether they have

received a Doctor's Degree. One of these is a sister who is superintendent of a parochial school. Twenty-four teachers of the fifty-four report four years of college preparation. Twelve report some training in addition to the four year degree. Eight of this group report a Master's Degree or better. Six teachers who had college preparation had less than the full four years.

TABLE XXIII
QUALIFICATION OF INDUSTRIAL ARTS TEACHERS
IN ACCREDITED SCHOOLS

No. of College Hours	No. of Teachers
None	4
Below 60 hours	0
61 - 90 hours	2
91 - 123	4
B.S. or A.B.	24
B.S. or A.B. plus summer work	12
M.S. or M.A.	5
M.S. or M.A. plus summer work	3
Ph.D. or Ed.D.	
Total	54

Teacher Education in the Industrial Arts Field. Table XXIV gives the number of college hours the teacher has had in industrial arts. Of this group nine had no college hours in industrial arts. Two report trade experience, with three making no report. Only one teacher reports over fifty semester hours in industrial arts work. It may be assumed that twelve of the teachers in this group have a major in industrial arts. Eleven indicated from one to ten semester hours with fifteen reporting from eleven to nineteen hours. In the standards for the accredited schools the teacher should have fifteen semester hours in the field in which he is teaching. According to Table XXIV there are twenty-two teachers who are teaching industrial arts that do not meet the standards for the accredited schools of the state. War conditions and teacher shortages are probably reasons this has been allowed.

TABLE XXIV
THE NUMBER OF COLLEGE HOURS THE TEACHER HAS IN INDUSTRIAL ARTS

No. of College Hours	No. of Teachers
None	9
Trade Experience	2
1 - 10	11
11 - 19	15
20 - 29	2
30 - 39	9
40 - 49	2
50 and over	1
Not reported	3
Total	54

Number of Units Offered. Table XXV gives the number of semester units that a student can obtain in industrial arts. One teacher did not give the information on the questionnaire. In the forty-eight schools from which returns were received, three indicated eight units of industrial arts work could be obtained in their school. The instructors of twenty-three schools stated that they were offering four units, closely followed by twenty schools having two units. Some of these schools give drawing one year and shop the next year. All information was converted to the semester unit basis.

TABLE XXV
NUMBER OF INDUSTRIAL ARTS UNITS OFFERED

No. of High School Units	No. of Schools
1 unit	0
2 units	20
3 units	1
4 units	23
5 units	0
6 units	0
7 units	0
8 units	3
Over 8 units	1
Not reported	1
Total	49

Length of Class Period. The length of the class period for the Accredited Schools is given in Table XXVI. Thirty-two schools of the forty-nine have a class period between 51 and 60 minutes in length. Only two schools reported less than 45 minutes class periods. One school in this group reported a double period and one a three hour period.

TABLE XXVI
LENGTH OF CLASS PERIOD IN
ACCREDITED SCHOOLS

Length of Period	No. of Schools
180 Min. (3 Hr.)	1
120 Min. (2 Hr.)	0
90 Min. (2-45 Min.)	1
61 - 70 Min.	0
51 - 60 Min.	32
45 - 50 Min.	13
Less than 45 Min.	2
Total	49

Industrial Arts Activities. The titles of the different industrial arts activities found in the accredited schools are given in Table XXVII. The title "Shop" is referred to in describing the course 36 times. Numerous titles such as Boys' Shop, Girls' Shop, and Freshman Shop are used. Manual training is referred to only one time while industrial arts is used five times in describing the course. According to this table the industrial arts subjects of the state need some organization whereby the same title referred to by two schools would mean that the students have covered identical work.

Teaching Combinations. Table XXVIII refers to the teaching combinations of the fifty-four teachers in the accredited schools. The table shows that eleven teachers are teaching only industrial arts. The remaining forty-three teach other subjects or do supervisory work along with their industrial arts

TABLE XXVII
SHOP ACTIVITIES
IN ACCREDITED SCHOOLS

Name of Activity	No. of Schools Teaching Each Subject
Shop	36
Mechanical Drawing	10
Woodwork	8
Industrial Arts	5
General Shop	4
Auto Mechanics	3
Elementary Woodworking	2
Household Mechanics	2
Wood Shop	1
Advanced Woodworking	1
Farm Carpentry	1
Architectural Drawing	1
Painting and Refinishing	1
Beginning Woodworking	1
Manual Training	1
Farm Mechanics	1
Motor Mechanics	1
Boys' Shop	1
Girls' Shop	1
Freshman Shop	1
Girls' Home Shop	1
Carpentry	1
General Woodworking	1

classes. The table shows that there are nineteen superintendents, three principals, and nine teachers who have coaching duties. The most frequently used combination is industrial arts and science. Some of these schools are so small that they employ very few teachers, making it necessary for the teacher to teach various subjects.

Use of Textbooks. Table XXIX gives the use of textbooks for the instruction of industrial arts in the Accredited Schools of the state. In this table ten teachers did not report or did not fill in information on the questionnaire. Twenty teachers reported using textbooks for instruction, and twelve teachers used textbooks to some extent. Some of these teachers stated that texts were used for mechanical drawing and not for shopwork.

TABLE XXVIII
VARIOUS TEACHING COMBINATIONS
IN THE ACCREDITED SCHOOLS

Teaching Combinations	No. of Teachers
Industrial Arts	11
Industrial Arts - Science	8
Industrial Arts - Supt. - Math - Sci.	5
Industrial Arts - Supt. - Coach	5
Industrial Arts - Math - Sci.	4
Industrial Arts - Supt. - Business Edu.	4
Industrial Arts - Coach - Math	3
Industrial Arts - Supt. - Music	3
Industrial Arts - Math	2
Industrial Arts - Principal	2
Industrial Arts - Superintendent	2
Industrial Arts - Coach	1
Industrial Arts - English	1
Industrial Arts - History	1
Industrial Arts - Prin. - Math	1
Industrial Arts - Business Education	1
Total	54

Some indicated that they were used for the beginning shop courses only. Twelve schools reported no texts used.

TABLE XXIX
USE OF TEXTBOOKS FOR INSTRUCTION

Use of Textbook	No. of Teachers
Yes	20
No	12
Some	12
Not reported	10
Total	54

Use of Film for Instruction. Table XXX indicates the use of films for instruction purposes. Twenty-eight teachers reported the use of no film or film strips in industrial arts. Ten reported using film while six indicated that they were used to some extent. Six schools in this group do not have a school projector. This would mean that forty-three schools did have projectors with only sixteen industrial arts teachers taking advantage of this

teaching aid. It might be that some of these schools are so small that the rental of shop films for a very small class would be too expensive for the number of students served.

TABLE XXX
USE OF FILM OR FILM STRIPS

Use of Film	No. of Teachers
Yes	10
No	28
Some	6
Not reported	10
Total	54

The foregoing information was secured from the questionnaire and State Department files. The writer looked for information concerning industrial arts clubs or extra curricular activities but did not find any indication that there was a club pertaining to industrial arts in the state. It is hoped that the information contained in this chapter will answer many questions concerning industrial arts in the small schools of the state of South Dakota.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

In order to facilitate the use of this study, a summary of the findings is given in this chapter. The data are treated in two ways, according to group and as a whole to show the comparison of the groups and the trends of the state. The recommendations for the advancement of industrial arts in the state will be included in this chapter.

Part A. Summary

The study covers the 89 schools in the state that have industrial arts in the school curriculum. There are 310 high schools in the state of South Dakota. Seventy-eight of the 310 schools belong to the North Central Association with 40 of the 78 schools having some form of industrial arts. The remaining 232 schools are state accredited schools and 49 of these have industrial arts in the school curriculum.

There are 56 teachers in the 40 schools in the North Central Association group and 54 teachers of industrial arts in the accredited group. This gives a total of 110 industrial arts teachers in the state.

The enrollment for the schools that are affiliated with the North Central Association is 17,429 students. The enrollment for the schools of this group that have industrial arts in the school curriculum is 12,316 students. This means that 5,113 pupils do not have access to industrial arts in the North Central schools. The accredited schools have a total enrollment of 13,545 students, and of this number 9,808 do not have access to industrial arts. This means that 14,981 students of the total state enrollment of 30,974 or approximately one-half of the students in the state do not have access to industrial arts.

Assuming that one-half of the students are boys then there would be approximately 7,500 boys that cannot take industrial arts in the state of South Dakota.

The largest student enrollment for any school in the North Central Association is 1800 and in the accredited school group it is 453 students. The smallest enrollment for the North Central Association is twenty-two students while the smallest for the accredited schools is seven students. The smallest enrollment for a school that has industrial arts in its curriculum is 66 for the North Central schools and fourteen for the accredited schools. The average enrollment for all schools in the North Central Association is 223 students and for the accredited schools it is 58 pupils. The average for the schools in the two groups that have industrial arts is 433 students for the North Central Schools and 75 for the accredited schools.

The average class size for the industrial arts classes in the North Central schools is eighteen students, with the largest class having thirty-seven students and the smallest four students. The accredited school group average class size is 10.7 students with the highest being thirty-four and the lowest having only two students. This gives an average class size of approximately fifteen students for all industrial arts classes in the state.

The North Central Association schools have an average inventory value of shop equipment of $11,000. while that of the accredited schools is only $1,000. The average for the mechanical drawing equipment in the North Central schools is $572. and the average for the accredited schools is only $93.

The salary for industrial arts teachers in the North Central Association schools range from $2500. to $4050. with an average of $3325. The highest for an industrial arts teacher with no administrative duties is approximately $3800. The range of salaries for the accredited schools is $1900. to $4000., however there are nineteen superintendents and three principals in this group. The

average salary in this group, excluding the teachers that have administrative duties, is $2936. The average of all teachers in this group is $3423.

There are twenty-six full-time teachers of industrial arts in the North Central group. The rest of the teachers have other teaching duties in addition to the classes of industrial arts. Only eleven teachers of the accredited group are full-time industrial arts teachers while the rest have administrative duties or teach other subjects.

All teachers in the North Central Association schools have a Bachelor of Science Degree or the equivalent. Eleven instructors have a Master of Science Degree. There are forty-four teachers in the accredited school group that have a Bachelor of Science Degree or the equivalent. Six teachers have less than a Bachelor of Science Degree and four do not have any college preparation.

The average length of the class period for both groups is 51 to 60 minutes. Teachers in five schools indicated that they were using a double period. Only two schools have a class period less than 45 minutes.

The majority of the North Central schools that have an industrial arts program offers four units of work. Five schools listed ten or more units of industrial arts subjects. Twenty-three of the accredited schools offer four units of industrial arts while twenty offer two units. Only four of the accredited schools indicated that eight or more units could be obtained by the student.

There are thirty teachers that have industrial arts majors in the North Central Association schools. Fifteen teachers have a minor in the field and seven indicate no college training in industrial arts. The accredited school group has twelve instructors with a major and twenty-eight with a minor in industrial arts. Eleven of this group stated that they had no college training in industrial arts.

From the returns received from the instructors in the North Central

Association schools twenty-seven activities were listed in industrial arts work. The term "Shop" was used thirteen times, "Manual Training" was used seven times and "Industrial Arts" was used six times. The teachers in the accredited schools listed twenty-three industrial arts activities. The term "Shop" appeared thirty-six times, "Industrial Arts" five times and "Manual Training" was listed only once.

There are thirty-seven full time industrial arts teachers in the state. The remainder teach other classes or have supervisory duties along with the industrial arts work.

Textbooks were used by fifty-seven of the teachers that reported. Only seventeen indicated that they did not use textbooks. Seventeen stated that they used them to some extent.

Films or film strips were used by twenty-six of the 110 teachers of industrial arts in the state. Forty-eight stated that they did not use them and seventeen indicated that they were used to some extent, depending upon the availability of the films.

Part B. Recommendations

After a careful study of the status of industrial arts in South Dakota for the school year 1948-49, the writer would like to present the following recommendations. Recognition of the physical and financial limitations for the advancement of the industrial arts program is acknowledged and the recommendations are made with due respect to the administrators, both state and local, who have had much to do with the advancement of the educational system of the state.

State Objectives. The objectives of industrial arts should be established for the state of South Dakota. These objectives should be flexible so as to

fit the needs of the students and the community.

State Course of Study. A course of study should be established for each type of industrial arts course that is offered in the state. This course should be revised within a reasonable length of time in order that the department may continue to advance in the field of education. This course would do away with the confusion that appears when a student changes from one school to another.

State Supervision. A state supervisor of industrial arts should be added to the state staff of inspectors. This inspector would coordinate the programs of the state and bring to the teacher in the field pertinent information concerning the industrial arts program. He should have experience as an industrial arts teacher and know the problems of the field.

State Advisory Committee. A state advisory committee for industrial arts should be established. The duties of this committee would be advisory in nature and they would work under the direction of the state supervisor. A recommended membership for the committee are as follows:

Two teachers from small cities.

Two teachers from large cities.

A supervisor of industrial arts from a small city.

A supervisor of industrial arts from a large city.

Two heads of departments selected from the state colleges.

A representative from the department at the University of South Dakota.

State Supervisor of Trade and Industrial Education.

Chairman of the industrial arts section of the South Dakota Education Association.

Chief High School Inspector.

Supervisor of Curriculum, State Department of Education.

Supervisor of industrial arts in the city where meeting is held.

State Textbooks. Textbooks should be adopted and used throughout the state. The course of study should be built around the state adopted textbook. Texts should be chosen for all types of courses in the industrial arts field that are offered in the state.

The Development of New Departments. New departments should be developed in order to get the subjects to a greater percentage of the boys in school. Many schools have an enrollment large enough for an industrial arts program.

The Development of the General Shop. The General Shop lends itself to the smaller schools of the state. It takes less equipment to establish a shop of this type. The course of study established in 1935 recommended the general shop but few schools have taken advantage of this type of shop work. The writer would like to emphasize the flexibility of this type of shop to fit the needs of the community.

Drawing a State Requirement. Drawing is the most universal language that is in use today. All people at many times in their lives get an opportunity to look at a house plan or the arrangement of the kitchen. This type of language is used in newspapers, magazines, etc. The writer recommends one semester of mechanical drawing or blue print reading to be required for both boys and girls towards the requirement for graduation.

Certification of Teachers. All teachers of industrial arts should be required to have a major in industrial arts or a minor in the teaching area of the field of industrial arts.

Graduate School. Graduate study should be available to the teachers of industrial arts who want to achieve self-improvement. The University of South Dakota has started such a program in the 1948-49 school year. It is expected to be in operation at full capacity within three years. The teacher will now be able to secure a Master'Degree within the state. Before this date there were no schools in the state able to give graduate work in industrial arts.

Teachers' Salaries. Salaries should vary according to the qualifications of the individual teacher with promise for advancement in relation to the number of years teaching experience.

Industrial Arts in Junior High Schools. Industrial arts should be developed in the seventh and eighth grades. Very few courses are now offered to the seventh and eighth grade students.

Further Research Study. The following subjects are suggested for further study in the field of industrial arts for the development of the program in the state:

A detailed study of the courses now being given in secondary schools.

Teacher education institutions and their relations to industrial arts in the state.

The development of a state course of study for all industrial arts subjects.

Problems concerning the development of industrial arts in Junior High School.

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